0063067

SAF-B00-004
Industrial Hygiene Sampling – Airborne
FINAL DATA

E:MAIL RESULTS TO:

Denise Pitts

N/A
INITIAL/DATE

ORIGINAL MUST BE SENT TO CLIENT SAMPLE MANAGEMENT KEEPS A COPY

COMPLETE DATA PACKAGE TO:

Denise Pitts X2-09

BL 10/12
INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE FAX COVER SHEET)

SDG D00426 SAF-B00-004

Rad only X Chem only Rad & Chem

X Complete Partial

With original chains of custody

107N Building

RECEIVED
NOV 0 8 2004
EDMC

DATA CHEM LABORATORIES, INC.

COVER PAGE
ANALYTICAL REPORT FOR
Bechtel Hanford, Inc.

Phone: (509) 375-4688
E-mail: jhkessne@mail.bhi-erc.com

SEP 30 2004

Bechtel Hanford, Inc.
3070 George Washington Way
MSIN H9-02
Richland, WA 99352

Attention: Joan Kessner

DCL Group ID: 04M-0155-02
DCL Project ID: P040X001
Fee Schedule Test Code: Air-O-Cell
Client Project ID: Not Provided

Client Sample ID	DCL Sample ID	Date Received	Date Analyzed
J01F01	04M01141	September 24, 2004	September 30, 2004
J01F02	04M01142	September 24, 2004	September 30, 2004
J01F03	04M01143	September 24, 2004	September 30, 2004
J01F04	04M01144	September 24, 2004	September 30, 2004
J01F05	04M01145	September 24, 2004	September 30, 2004

This report contains results of analyses performed by DataChem Laboratories, Inc. (DCL) pertaining to the sample(s) referenced above. DCL is AIHA accredited for specified Fields of Testing as documented by the scope of accreditation. The Mycology laboratory manager and analysts hold at least a B.S. degree in Microbiology or equivalent discipline, and are well qualified and experienced with microbial identification.

Analyzed By: _____
Adrian A. Gallardo

Reviewed By: Jose G. Rocha
Jose G. Rocha

RECEIVED OCT 2004

D004126

DATA CHEM LABORATORIES, INC.

ANALYSIS DATA SHEET

BIOAEROSOL SPORE ANALYSIS

Client: Bechtel Hanford, Inc.
Project ID: Not Provided

Method: MC-AN-001
Matrix: Air-O-Cell

Lab Sample ID	04M01141	04M01142	04M01143
Client Sample ID	J01F01	J01F02	J01F03
Density Rating	1	2	2
Total Volume (L)	104	104	104
Total Volume (m^3)	0.104	0.104	0.104

Summary Results	Analyst Count	Count/m^3	Analyst Count	Count/m^3	Analyst Count	Count/m^3
Pollen	1	11	0	0	1	11
Mycelial Fragments	0	0	1	11	8	86

	Analyst Count	Spore Count/m^3	Analyst Count	Spore Count/m^3	Analyst Count	Spore Count/m^3
Alternaria	0	0	1	11	1	11
Amerospores	89	951	3	32	0	0
Arthrinium	0	0	0	0	0	0
Ascospores	24	256	0	0	2	21
Aspergillus/Penicillium	11	118	27	288	1730	18500
Basidiospores	19	203	1	11	0	0
Bipolaris/Dreschlera	0	0	0	0	0	0
Chaetomium	0	0	0	0	0	0
Cladosporium	5	53	2	21	2	21
Curvularia	0	0	0	0	0	0
Nigrospora	0	0	0	0	0	0
Oidium/Peronospora	0	0	0	0	0	0
Paecilomyces	0	0	0	0	0	0
Pithomyces/Ulocladium	0	0	0	0	0	0
Rusts	0	0	0	0	0	0
Smuts/Myxomycetes	1	11	1	11	4	43
Stachybotrys	0	0	0	0	0	0
Stemphylium	0	0	0	0	0	0
Torula	0	0	0	0	0	0
Unidentified Conidia	0	0	0	0	0	0
TOTAL SPORES	**149**	**1592**	**35**	**374**	**1739**	**18596**

Method Used: Samples are analyzed under plain light microscopy with the aide of appropriate staining techniques and visualized under 630x magnification. The density rating of the sample is estimated by visual observation. 100% of the entire slide is read. Spore particulate concentrations are calculated utilizing trace length and microscopic field diameter as recommended by the manufacturer of the spore trap cassette. All microscopists hold at least a B.S. degree in Microbiology or equivalent discipline.

Analyzed By: Adrian A. Gallardo

Reviewed By: Jose G. Rocha
Jose G. Rocha

DATA CHEM LABORATORIES, INC.

ANALYSIS DATA SHEET

BIOAEROSOL SPORE ANALYSIS

Form: MYC001-V1.3.3
Report: 04M0155-02
Date: September 30, 2004

Client: Bechtel Hanford, Inc.
Project ID: Not Provided

Method: MC-AN-001
Matrix: Air-O-Cell

Lab Sample ID	04M01144	04M01145	
Client Sample ID	J01F04	J01F05	
Density Rating	2	0	
Total Volume (L)	104	0	
Total Volume (m^3)	0.104	0.00	

Summary Results	Analyst Count	Count/m^3	Analyst Count	Count/m^3		
Pollen	**1**	**11**	0	NA		
Mycelial Fragments	**5**	**53**	0	NA		

	Analyst Count	Spore Count/m^3	Analyst Count	Spore Count/m^3		
Alternaria	**1**	**11**	0	NA		
Amerospores	0	0	0	NA		
Arthrinium	0	0	0	NA		
Ascospores	0	0	0	NA		
Aspergillus/Penicillium	**1520**	**16200**	0	NA		
Basidiospores	0	0	0	NA		
Bipolaris/Dreschlera	0	0	0	NA		
Chaetomium	0	0	0	NA		
Cladosporium	**1**	**11**	0	NA		
Curvularia	0	0	0	NA		
Nigrospora	0	0	0	NA		
Oidium/Peronospora	0	0	0	NA		
Paecilomyces	0	0	0	NA		
Pithomyces/Ulocladium	0	0	0	NA		
Rusts	0	0	0	NA		
Smuts/Myxomycetes	0	0	0	NA		
Stachybotrys	0	0	0	NA		
Stemphylium	0	0	0	NA		
Torula	0	0	0	NA		
Unidentified Conidia	0	0	0	NA		
TOTAL SPORES	**1522**	**16222**	**0**	**NA**		

Method Used: Samples are analyzed under plain light microscopy with the aide of appropriate staining techniques and visualized under 630x magnification. The density rating of the sample is estimated by visual observation. 100% of the entire slide is read. Spore particulate concentrations are calculated utilizing trace length and microscopic field diameter as recommended by the manufacturer of the spore trap cassette. All microscopists hold at least a B.S. degree in Microbiology or equivalent discipline.

Analyzed By: Adrian A. Gallardo

Reviewed By: Jose G. Rocha
Jose G. Rocha

960 West LeVoy Drive
Salt Lake City, UT 84123
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Fax: (801) 268-9992
Web Page: www.datachem.com
E-mail: lab@datachem.com

DATA CHEM LABORATORIES, INC.

COMMENTS PAGE

Client: Bechtel Hanford, Inc.
Project ID: Not Provided

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted in the Narrative Comments.

This page is the concluding page of the report.

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DATA CHEM LABORATORIES, INC.

CASE NARRATIVE

Client: Bechtel Hanford, Inc.
Client Project ID: Not Provided
DCL Project ID: P040X001

DCL Group ID: 04M-0155-02
Method: MC-AN-001
Matrix: Air-O-Cell™

General Set Information: 5 samples were collected on Air-O-Cell™ cassettes and received by DCL for Bioaerosol Spore Analysis using DCL Method MC-AN-001.

Method Summary: DCL Method MC-AN-001 is used to determine fungal spore counts using plain light microscopy under 630x magnification. 100% of the entire sample slide is read. Individual spherical spores lacking any distinguishing characteristics may be grouped and classified under the category "Amerospores." Total fungal spore particulate concentrations include both viable and non-viable counts. The calculated total count is based on the trace length and microscopic field diameter, as recommended and described as correct methodology by the manufacturer of the spore trap cassette. Individual spore counts greater than 400 are based on estimates, due to the higher density rating.

Sample Preparation: The analytical slide is removed from the spore trap cassette and mounted on a supportive glass slide, which is then prepared for viewing by the use of appropriate microbiological stains.

Density Rating: The density rating is based on a visual observation of the non-spore particulate that can mask the presence of fungal spores. Excessive non-spore particulate may make it difficult to produce accurate results and therefore, the following scale is used to assist in the interpretation of the results.

Density Rating	Observation	Interpretation
0	No particulate detected	May indicate improper sampling or blank
1	Minimal particulate present	Analysis is optimal
2	Minor particulate present	Fair analytical conditions
3	Sufficient particulate present	May affect analysis accuracy
4	Abundant particulate present	Analysis may not accurately reflect spore concentration
5	Severely occluded	Sample is not acceptable for analysis

Sample Calculation: Fungal spore concentrations in spores/m^3 were determined from the following equation:

$$\frac{\textit{Spore Count}\left(\dfrac{14.4}{\textit{Microscopic Field Diameter} \times \textit{Number of Transverses}}\right)}{\textit{Sample Volume}\ (m^3)} = \textit{Spore Concentration}\ (\textit{spores}/m^3)$$

Where: *Microscopic Field Diameter* is equal to 0.28 mm under 630x magnification; and *Number of Transverses* at 630x magnification has been determined at an average of 48 fields.

Health Effects: Although certain molds and fungi have been documented in association with allergenic or pathogenic properties, DCL makes no representation as to whether any one specific organism that may be present in the sample(s) analyzed by DCL is harmful to humans or animals.

References:

Atlas of Clinical Fungi, G. S. de Hoog, J. Guarro, J. Gene & M.J. Figueras, Centraalbureau voor Schimmelcultures/ Universitat Rovira I Virgili, 2000.

Identifying Filamentous Fungi, Guy St-Germain, Richard Summerbell, Star Publishing Company 1996.

DATA CHEM LABORATORIES, INC.

CASE NARRATIVE

Miscellaneous Comments: None.

Analyzed By: _____
Adrian A. Gallardo

Reviewed By: Jose G. Rocha
Jose G. Rocha

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E-mail: lab@datachem.com

DataChem Laboratories, Inc.

Mycology Chain-of-Custody

04M-955-02

0574

Page ____ of ____

Client Name & Address: Joan Kessner Bechtel Handford, Inc. MSIN H9-02 3070 George Washington Way Richland, WA 99352	Project No.: Contract # 0000X-BO-G0058B
Phone: (509) 375-4688	Project Name: ~~Contract #~~ Not Provided ~~0000X-BO-G0058-B~~
FAX:	Sampler: *(Signature)*
e-mail: JHKessne@mail.bhi-erc.com	

Requested Turn Around Time:

☐ Rush (Same Day) ☐ 24 Hours (Next Day)

☒ 2-5 Days (Regular) ☐ Other

(Rush is email or fax data)

Sample ID	Date	Sample Location Description	Preservation Code	Sample Type Code	Air, Microscopic	Air, Culture	Bulk, Microscopic	Bulk, Culture	Dust, Microscopic	Dust, Culture	Surface Microscopic	Surface, Culture	Wall Check	Culture Speciation	Volume/Area	Remarks
J01F00	9/21	Blank				X										04M01136
J01DY96	9/21	Outside				X										37
J01DY87	9/21	Main Floor				X										38
J01DY78	9/21	Tank Basement				X										39
J01DY69	9/21	Room 2 Basement				X										40
J01F01	9/21	Outside			X										150	41
J01F02	9/21	Main Floor			X										150	42
J01F03	9/21	T1 Tank Basement			X										150	43
J01F04	9/21	Room 2 Basement			X										150	44
J01F05	9/21	Blank			X										150	45

Sample Type Codes:
A) Air
D) Dust
T) Tape
S) Surface Swab
W) Water
WC) Wall Check
O) Other

Preservation Codes:
1) Temp at ___ oC
2) Sterile Saline
3) Buffer _____

Sample Disposal: ☐ Return to Client ☐ Archive for ____ Months ☐ Disposal by Lab (fees may be assessed for samples retained longer than 3 months)

Relinquished by: *(Signature)*	Received by: *(Signature)*	Date: 9/24/04	Time
Relinquished by: *(Signature)*	Received by: *(Signature)*	Date	Time
Relinquished by: *(Signature)*	Received by: *(Signature)*	Date	Time

Shipped to:
DataChem Laboratories, Inc.
960 West LeVoy Drive
Salt Lake City, UT 84123
Phone: (800) 356-9135
Phone: (801) 266-7700
FAX: (801) 268-9992
www.datachem.com

White - Laboratory Copy *Yellow - Client Copy*

1/3/2003 Revision

Bechtel Hanford, Inc.	ERC/INDUSTRIAL HYGIENE CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
Collector: Jeff Brunson	Company Contact: Henry W. Ruby and Denise A. Pitts	Telephone No.: 373-5600	Project Coordinator: Joan H. Kessner	Data Turnaround: RUSH
Payroll #: 73153	Sampling Location: 100 Area/107N Building	SPECIAL INSTRUCTIONS All relevant COAs must be provided: R107N0 200C	SAF No.: B00-004; B00-005	
Type of Sample: Area		ANALYSIS METHOD (SPECIFIC): standard laboratory analysis for biological sampling	Method of Shipment: FED EX	
Shipped To: Data Chem Salt Lake City			Bill of Lading/Air Bill No.: SEE 037 C	
POSSIBLE SAMPLE HAZARD/REMARKS: None known	MATRIX: A - AIR; WI - WIPE; X - OTHER	Preservation (ie., cooling required, etc.)	No	No
Special Handling and/or Storage				

SAMPLE ANALYSIS								
SAMPLE NO.	MATRIX	SAMPLE DATE	VOLUME (L)	Comments	Asbestos Airborne	Lead Airborne	Biological Airborne	
J01F01	A	9-21-04	104	outside Zefon Air-O-Cell	N/A	N/A	X	
J01F02	A	9-21-04	104	Mintfloor Zefon Air-O-Cell	N/A	N/A	X	9-21-04
J01F03	A	9-21-04	104	T1 Tank Zefon Air-O-Cell	N/A	N/A	X	
J01F04	A	9-21-04	104	Sump Room #2 Zefon Air-O-Cell	N/A	N/A	X	
J01F05	A	9-21-04	N/A	Blank	N/A	N/A	X	
					9-21-04			

ERC/INDUSTRIAL HYGIENE CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

SIGN / PRINT NAMES / USE MILITARY TIME

Relinquished By/Stored:	DATE / TIME	Received By/Stored:	DATE / TIME
Jeff Brunson Jeff Brunson	9-21-04 1541	Bldg. 107N / Locked Change Room	9-21-04 1541
Bldg. 107N / Locked Room (Change Room)	9-22-04 0835	Nate Taylor	9/22/04 0835
Nate Taylor	9/22/04 0955	RCF11405 K.S. Eliason/Kela	9.22.04 / 0955
K.S. Eliason/Kela	9-23-04 / 1300	SJ GALE SJ Gale	92304 1300
SJ GALE SJ Gale	92304 1330	FED EX	

LABORATORY SECTION	Received By	Title	DATE / TIME

REVIEWED BY: _____ DATE: _____

PRINT/SIGN NAME